



Workshop on Plantation Forestry GIS

Vientiane Lao PDR

by

**Patrick Durand
Laurent Gazull**

Cirad-forêt

12-14 December 2000

Mission LAOS (7 - 16 Décembre 2000)

Patrick Y. Durand / Laurent Gazull

Objectifs:

- 1- Préparation et conduite d'un Atelier Régional à Vientiane (Laos) sur les Systèmes d'Information Géographique (SIG) appliqués aux plantations forestières et agroforestières au Laos, Philippines et VietNam.
- 2- Discussion avec le Département Laotien des Forêts sur les possibilités d'une extension du projet et d'une Phase 2.

1- Préparation et conduite de l'Atelier Régional sur les SIG appliqués aux plantations forestières et agroforestières au Laos, Philippines et VietNam.

- a) Un Atelier, financé par le Ministère des Affaires Etrangères, (Réf: Engagement 145 / 584 du 6 Septembre 2000), a été organisé par le Cirad-forêt en étroite collaboration avec le Département des Forêts du Laos (DOF) et l'Institut National de Recherche Agronomique et Forestière du Laos (NAFRI), à Vientiane du 12 au 14 Décembre 2000.
- a- Du 8 au 11 Décembre, la mission a été consacrée à la préparation de l'Atelier:
 - a) Entretien avec le Directeur Général des Forêts (DOF), Mr Xeme Samountry (8/12).
 - b) Mise à jour du programme des trois journées de l'Atelier validé par le NAFRI et DOF (réunion de travail du 8/12)
 - c) Réunion de travail avec Mr Pheng Souvanthong, Directeur de la Forest Management, Plantation & Industry Division, et le responsable de Division Administrative & Financières du Ministère de l'Agriculture & des Forêts (MAF) pour discuter du budget, de la remise d'argent en espèces (perçu auprès du Crédit Lyonnais Singapour le 7 Décembre et le 12 Décembre via la Bangkok Bank) et des procédures administratives à suivre pour la collecte des pièces justificatives à remettre au Cirad-forêt.
 - d) Collecte des documents présentés par les experts invités, duplication et préparation des dossiers destinés aux participants. (9-11/12)
 - e) Conception et préparation du formulaire d'enquête devant être distribué aux participants. (10/12)
 - f) Préparation de la salle de réunion (équipement audiovisuel, exposition des posters présentés par le Cirad forêt, le CRISP/ Singapour, le FIPI/ Vietnam et BGA Lao Plantation Forestry Ltd / Laos. (11/12)
- ✓ Réunion de travail avec DOF et MAF le 15 Décembre pour faire le point sur les aspects comptables de cet Atelier et récupérer toutes les pièces comptables nécessaires pour le rapport final à remettre au Ministère français des Affaires Etrangères.

1.2- Cet Atelier avait plusieurs **objectifs**:

- a) Objectif 1: Présenter l' expérience acquise par le Laos depuis 1995 dans le cadre du Projet "Lao ADB Plantation Forestry":

- a- Mise au point d'outils méthodologiques innovants pour l'identification des sites de plantations (Socio-Technical Profile ou STP), l'évaluation et le suivi de l'impact sur l'environnement (Environment Baselines Survey ou EBS, Environment Impact Monitoring ou EIM) ,
 - b- Approche participative par le biais de plantations pilotes de démonstration et de vulgarisation, faisant intervenir les villageois et les communautés rurales, et les petites entreprises forestières,
 - c- Acquisition de données sylvicoles, agroforestières, socio-économiques, environnementales etc.
- b) Objectif 2: Faire partager cette expérience avec les pays de la région (Laos, Philippines, Thaïlande, VietNam) ayant à traiter les mêmes problématiques de reforestation et de développement rural.
- c) Objectif 3: Evaluer les besoins et les attentes de la part de toutes les catégories de partenaires, en matière de SIG en tant qu'outil de prise de décision, de gestion et de suivi des plantations forestières et agroforestières.
- d) Objectif 4: Inviter les agences de développement et des pays donateurs engagés dans le développement du Laos et des autres pays de la région, à exprimer leurs points de vue et leurs recommandations concernant la mise en oeuvre de SIG dans les programmes de développement rural et les projets agroforestiers et de reforestation, avec un souci de coordination et de concertation, afin d'éviter les duplications dans les actions de développement.

1.3- **Invitation d'intervenants**: Pour traiter des applications de SIG dans les projets agroforestiers dans les pays de la région, plusieurs spécialistes ont été invités dans le cadre de cet Atelier:

- a) **A/Prof. Nathaniel Bantayan**, Directeur de l'Institute of Renewable Natural Resources / Université des Philippines Los Banos (UPLB), Philippines
- b) **Dr Do Xuan Lan**, Senior Scientist, Forest Inventory & Planning Institute (FIPI), Ministère de l'Agriculture & du Développement Rural, Hanoi, Vietnam.
- c) **Dr Liew Soo Chin**, Directeur des recherches, Centre of Remote Imaging, Sensing & Processing (CRISP), Université Nationale de Singapour (NUS), Singapour
- d) **Anthony Zola**, chercheur senior du Mekong Environmental Resources Institute (MERI), Bangkok, Thaïlande, spécialiste en protection de l'environnement et analyse d'impact sur l'environnement (EIA),
- e) **Laurent Gazull**, chercheur au Cirad-forêt, spécialiste en bases de données et Systèmes d'Information Géographique, Montpellier (France).

Le secteur privé, représenté par **Marc Linton**, Directeur de la BGA Lao Plantation Forestry Ltd, entreprise Lao-Néozelandaise établie dans la Province de Saravanne, a été invité à présenter l'expérience de cette PME

1.4- **Participants**: Pour atteindre les objectifs fixés, il était indispensable d'avoir des représentants de tous ceux qui sont parties prenantes à des degrés divers dans le développement rural et agroforestier: provinces, représentant des communautés rurales, secteur privé, administration forestière centrale et provinciale, agences de développement, organismes de recherches.

Dans cette optique, ont été invités:

- a) Les délégués des provinces suivantes: Vientiane, Municipalité de Vientiane, Bolikhamxai, Saravanne, Savannakhet, Champasak,
- b) Les représentants de l'Ambassade de France au Laos, Vietnam, Thaïlande et Singapour,

- c) Les agences de développement : Agence Française de Développement (AFD) (Laos, Vietnam), GTZ (Allemagne), SIDA (Suède), FINIDA (Finlande), CIDA (Canada), JICA (Japon), FAO Laos, PNUD Laos.
- d) La Banque Asiatique de Développement (ADB)
- e) Le secteur privé: Burapha Agroforestry Company Ltd, Km 5 Forest Products Ltd, HIPA Sdn Bhd., ainsi que Innoprise Corporation Sdn Bhd (ICSB), un partenaire du Clrad-forêt au Sabah (Malaisie)

1.5- Déroulement de l'Atelier.

Voir le programme de l'Atelier en Annexe 1.

Les points saillants de cet atelier sont:

- ✓ L'importance accordée par le Ministère de l'Agriculture et des Forêts (MAF), et du Département des Forêts, à cet atelier sur les SIG, qui a été soulignée avec force dans le discours d'introduction de Mr Phouvieng, Directeur Général du Cabinet du MAF et par Mr Xeme Samountry, Directeur Général des Forêts.
- ✓ La qualité des présentations faites par les personnes ressources invitées (FIPI / Vietnam, MERI/ Thailand, IRNR-UPLB/ Philippines, CRISP/Singapour et BGA Lao Plantation Forestry /Laos)
- ✓ L'intervention de Laurent Gazull, qui a été particulièrement appréciée, en raison du caractère très concret de l'exemple d'application en Nouvelle Calédonie (SIG TANGO). La démonstration sur ordinateur a démontré l'efficacité de ce SIG élaboré en concertation avec les utilisateurs finaux sur le terrain.
- ✓ La rapide enquête parmi les participants effectuée par le biais d'un formulaire à remplir, qui a démontré le besoin en formation sur les bases de données et SIG, et en assistance technique pour monter un SIG appliqué aux besoins, à plusieurs niveaux: Niveau central (DOF, MAF, NAFRI), niveau des provinces et des entreprises privées.
- ✓ Malgré la faible présence des agences de développement¹, l'expression d'intérêt exprimés par les délégués pour l'application pratique de SIG comme outil de gestion durable des ressources naturelles, comme outil d'aide à la décision. L'intérêt pour le partage de certaines données a également été évoqué. Les besoins en formation concernant les bases de données et les SIG ont été souvent exprimés.
- ✓ L'intervention de ICSB qui a permis d'illustrer concrètement l'utilisation des SIG au sein d'une grande entreprise forestière
- ✓ La journée consacrée à la visite de parcelles qui a mis en évidence l'intérêt porté par les petits propriétaires et les entreprises forestières pour les investissements dans les plantations forestières et agroforestières²
- ✓ La visite de l'usine de Km 5 Forest Products Ltd qui a permis de montrer l'utilisation industrielle des Eucalyptus de plantation.

¹ La FAO, le PNUD, le GTZ et le SIDA étaient représentés de même que la Banque Asiatique de Développement. En revanche, le JICA et le FINIDA étaient absents, sans doute par le fait que leur Bureau de Représentation est à Bangkok (Thaïlande). Le Ministère de l'Agriculture et des Forêts a regretté tout particulièrement l'absence de la Représentation française (Ambassade de France et Agence Française de Développement).

² On peut regretter le choix fait par DOF des parcelles visitées, malgré les conseils répétés du Clrad-forêt: il aurait été intéressant de visiter des parcelles agroforestières (associant Acacia et/ou Eucalyptus avec du riz pluvial, du maïs, des ananas ou du Coton) gérées par des villageois. Les parcelles visitées ne montraient que des plantations de qualité très moyennes, alors que certaines parcelles mise en place plus récemment ont utilisé du matériel végétal plus performant.

- ✓ Lors de la dernière session (14 Décembre), l'adoption à l'unanimité, dans son principe, d'une proposition d'actions régionales concertées.

1.6- Conclusions & Recommandations

- a) Un projet de document final présentant les conclusions et recommandations de l'Atelier a été discuté au cours de la dernière session de l'Atelier.
- b) Le document final tenant compte des remarques, notamment celles du Directeur Général des Forêts, des Délégués des Provinces (Provincial Forestry Offices / PFO et Provincial Project Coordinating Units / PPCU) finalisé le 15 Décembre avec le Département des Forêts figure en Annexe 2.

1.7- Perspectives

Un document intitulé: "Coordinated Regional Actions for Plantation Forestry GIS Development" a été élaboré. Voir en Annexe 2.

Ce texte constitue une ébauche qui doit être discutée en détail à plusieurs niveaux:

- ✓ au sein du Cirad-forêt / Cirad
- ✓ avec les autorités compétentes des pays partenaires (Laos, Philippines, Singapour, Thaïlande et Vietnam)

avec, parallèlement, des discussions auprès des bailleurs de fonds et agences de développement intéressés, pour envisager des possibilités de cofinancement.

Une évaluation financière est à effectuer rapidement de manière à initier le processus de cycle de projet normal avec les bailleurs de fonds

>> Actions de suivi:

- ◆ Finaliser la proposition d'Actions concertées avec les partenaires des pays concernés (Laos, Philippines, Singapour, Thaïlande et Vietnam)
- ◆ Actions auprès des bailleurs de fonds, agences de développement pour identifier des possibilités de co-financement.

>>> Prog A&Plant. et Laurent Gazull/ appuyé par Patrick Durand

2- Possibilités d'extension du projet et perspectives

2.1- La mission ADB de Mai 2000 effectuée par la nouvelle responsable du Projet, Ms S. SAHNI a:

- b- confirmé les quelques points faibles identifiés lors des missions ADB précédentes (services de l'Agriculture Promotion Bank (APB) auprès des petits planteurs et villageois, problèmes ponctuels de conduite des plantations),
- c- recommandé une mission d'appui d'un expert de la Banque dans le but de proposer des solutions pratiques à ces problèmes.
- d- estimé que le Gouvernement du Laos avait globalement atteint ses objectifs, en matière de plantations forestières, en qualité et en quantité.

Par ailleurs, la promotion des activités agroforestières dans le cadre du projet par le consultant (Cirad-Forêt + Midas + Burapha) a été très appréciée par la Mission, de même que les efforts du Cirad-forêt à organiser un Atelier sur les SIG appliqués aux plantations forestières et agroforestières.

2.2- L'ADB a confirmé son accord de principe pour une extension de ce projet et le Gouvernement du Laos (DOF/MAF) a proposé à la Banque une prolongation d'un an, avec en principe l'intervention de l'expert en environnement du Cirad-forêt (Anthony Zola). Attente de la confirmation de l'ADB.

2.3- Les recommandations de S. Sahni se sont concrétisées par une mission effectuée en Novembre 2000. Les grands points de cette mission figurent en Annexe 3.

2.4- La Banque Asiatique de Développement s'est dit favorable à une seconde phase, sur appel d'offres. Le Directeur Général des Forêts, Mr Xeme Samountry, a de son côté laissé entendre qu'une seconde phase pourrait être envisagée, mais que l'approche serait différente. Les discussions menées avec le Directeur Général des Forêts par Patrick Durand permettent de donner les grands axes qui devraient soutenir l'approche de cette seconde Phase:

- ✓ Zone du projet: à l'Ouest et au Nord Ouest de Vientiane (Zone au relief plus accidenté)
- ✓ Plusieurs espèces de bois d'oeuvre, notamment avec des essences locales, dont le TECK).
- ✓ Approche "Community -managed Plantations" ainsi que "community-based small scale forest Industries"
- ✓ Application systématique des outils méthodologiques mis au point lors de la première phase du Projet "Lao ADB Plantation Forestry" : STP, EBS, EIM.
- ✓ Mis en oeuvre d'outils SIG adaptés.

2.5- Dans cette hypothèse, une PPTA (Project Preparation Technical Assistance) serait lancée par appel d'offres en 2001. L'exécution du projet lui-même commencerait en 2002 (c'est à dire peu de temps après la fin du Projet Phase 1 (Plantation forestry project), et les services de consultants seront recrutés sur appels d'offres. Pour le Cirad-forêt, cela implique d'identifier dès maintenant de nouvelles alliances, en fonction de la concurrence et de l'évolution de la situation au sein du Ministère de l'Agriculture et des Forêts (MAF) et DOF.

>> Actions de suivi:

- | |
|---|
| <ul style="list-style-type: none">▪ Maintenir les contacts avec DOF pour l'extension du projet (amendement de l'accord Cirad-foret / MAF-DOF?)▪ Alliance à envisager et bâtir avec partenaires internationaux et locaux pour le PPTA (2001) et l'appel d'offre exécution du Projet Phase 2.▪ Mise à jour du DACON du Cirad-forêt auprès de l'ADB. |
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>>> Prog A&Plant. Appuyé par Patrick Durand

Annexe 1

Workshop background:

The Lao- ADB Plantation Forestry Project initiated in 1994 has developed innovative methodological tools:

- ✓ Socio-technical evaluation of potential sites suitable for rural plantations.
- ✓ Environmental impact assessment and monitoring,
- ✓ Monitoring of socio-economical benefits of the project.

Additionally, numerous Growth & Yield measurements were carried out in permanent plots located in the pilot plantation blocks of the project.

As a result, a huge number of data collected during the six years of the project implementation are available, of several types,

such as: silvicultural, socio-economical, environmental, bio-diversity, etc.,

that need to be managed, processed, analyzed and utilized

About the Workshop:

Workshop on Plantation Forestry GIS

12 to 14 December 2000

Patronage:

✓ National Agriculture & Forestry Research Institute (NAFRI)

and

✓ DOE / Ministry of Agriculture & Forestry

Venue:

Department of Forestry (DOF), Vientiane, Lao PDR.

Organizers:

- ✓ Lao - ADB Plantation Forestry Project,
- ✓ CIRAD-Forêt

Funding:

- > Ministry of Foreign Affairs (MAE), (France) ,
CIRAD-Forêt
- > Lao - ADB Plantation Forestry Project / DOE (Lao)

For further information, please contact

> Dr Phet Phomphiphak, Project Director,
Lao - ADB Plantation Forestry / DOE
Tel: +856 21 215003 / Fax: +856 21 215230

> Patrick Y. Durand, Cirad-forêt, France
Fax: + 33 4 67 59 37 32
e-mail: patrick.durand@cirad.fr

Workshop on Plantation Forestry GIS

**Vientiane, Lao PDR
12- 14 December 2000**

Theme:

*"A specific Geographical
Information System (GIS) for
the establishment and
monitoring of tree farming:*

*Needs for a decision-making and
planning tool shared by ASEAN
countries, for sustainable and socio-
economically viable agroforestry
development"*

The objectives of the Workshop:

✓ Objective 1:

To capitalize experience gained in the framework of the Lao- ADB Plantation Forestry Project: to present the principles of database management and of GIS applied to agroforestry plantations, as well as the potential applications for rural development in Laos;

✓ Objective 2:

To share the experience of this project with specialists from Laos and other ASEAN countries: Philippines, Singapore, Thailand, Vietnam;

✓ Objective 3:

To assess the needs and expectations in terms of GIS applied to agroforestry plantations, expressed by the stake holders.

✓ Objective 4:

To invite development agencies and donors involved in Laos and in the region to express their views, recommendations, and suggest proper action in order to coordinate development programmes and avoid redundancy in development projects.

Proposed programme:

Day 1: Introduction & methodology

Morning:

✓ **Key note address** by Dr Ty PHOMMASACK, Director General of NAFRI: "GIS as a tool for decision-making and monitoring for sustainable natural resources management."

✓ **Session 1:**

"Policy of DOF in terms of GIS applied to agroforestry development":

presentation by DOF

✓ **Session 2:**

"Basics of database management modeling, GIS and mapping"

- 1- Basics of data analysis and database management adapted for exchange and coordinated GIS applications, by Laurent GAZULL, CIRAD-Forêt.
- 2- GIS as a tool for land use and for plantation management and monitoring, by CIRAD-Forêt
- 3- Environmental data for GIS applications, by Anthony ZOLA, MERI, (Thailand), CIRAD-Forêt consultant.
- 4- Project socio-economic benefit monitoring

Afternoon:

✓ **Session 3:**

"Similar regional experience in GIS applied to agroforestry development"

- 1- A/Prof. Nathaniel BANTAYAN, Institute of Renewable Natural Resources, College of Forestry & natural Resources (UPLB) Philippines.
- 2- Dr Nguyen Huy PHON, Deputy Director, Forest Inventory & Planning Institute (FIPI), Vietnam.
- 3- Dr LIEW Soo Chin, Head of Research, Centre for Remote Imaging, Sensing & Processing (CRISP), NUS, Singapore.
- 4- Dr Yves LAUMONNIER, CIRAD-Forêt, France: on GIS applied to Forest fire prevention and Land use in Sumatra, Indonesia.

Day 2: Field visit

✓ **Preliminary Presentation of the Lao - ADB Plantation Forestry Project:**

objectives, approach and organization, outcomes, difficulties encountered.

presentation by Dr Phet PHOMPHIPHAK, Project Director / DOF.

✓ **Visit of Project plots**

(Vientiane Municipality, Vientiane Province)

Day 3: Discussion & recommendations

Morning:

✓ **Session 4:**

"Expression by the stake holders of their needs and expectations"

1- Private sector: paper presented by Mark LINTON, BGA Lao Plantation Forestry Ltd.

2- Small holders and rural communities

Afternoon:

✓ **Session 5:**

"Recommendations and proposed coordinated actions"

1- Position and approach from various development agencies and donors. (ADB, World Bank, UNDP, FAO, AFD, GTZ, SIDA, DANIDA, FINIDA, etc.)

2- Recommendations and proposed coordinated actions

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1- Conclusion

From the papers presented during this Workshop by the various invited resource persons from the Philippines, Singapore, Thailand, Vietnam as well as from several forestry companies established in Lao PDR, it appears that there is already some experience and competence gained in the field of GIS applied for plantation forestry.

The conclusions pertaining to the Lao PDR context, drawn from the Workshop, from the discussions and from the questionnaires filled by the participants are as follows:

- (a) There is a need for a **clear definition** of what is a Geographical Information System.
- (b) GIS, in the framework of Plantation Forestry in Lao PDR, is recognized as a **tool** for:
 - Planning and monitoring,
 - Negotiation in community forestry issues,
 - Site identification
- (c) There are **specific needs in GIS** for plantation forestry at different levels:
 - ◆ Department of Forestry (DOF)
 - ◆ Provincial level
 - ◆ End-users / group of farmers, private forestry enterprises.

and for each level, the **use of GIS is different**.

- (d) There is a **need in linkage / networking** between GIS, existing or to be set up, used by the different users (DOF, National Agriculture & Forestry Research Institute / NAFRI, Provincial Forestry Offices, Forestry enterprises).

>> For this reason, there is an **immediate need in designing a common dictionary** for all Geographical data to be used.

- (e) There is a **need in training and adapted equipment** (hardware and software) suitable for each category of users .
- (f) GIS should be taken into account for use in the future as **part of the forest certification process**.

2- Proposed Recommendations

- (a) **Socio-Technical Profiles (STP), Environmental Baselines Surveys (EBS)**, as well as the **Environmental Monitoring**, are tools that have been developed and are already used in the framework of the Lao ADB Plantation Forestry Project. It is recommended that these tools should be integrated into an adapted GIS, to be used at different levels:

- DOF,
 - Provincial Forestry Offices,
 - NAFRI.
- (b) **Growth & Yield** data collected in the Permanent sample Plots in various location of the Lao ADB Plantation Forestry Project should be **also integrated** into an adapted GIS.
- (c) NAFRI should be the Executing Agency responsible for:
- ◆ setting up the **GIS design and the networking**,
 - ◆ organising, in close collaboration with DOF and the Provincial Forestry, Offices the **GIS training programme**.
- (d) NAFRI should play a key role in the **Research & Development (R&D)** on:
- ◆ **Forest tree species / site matching**
 - ◆ **Growth & Yield interrelated with site conditions**
- that could be integrated into the Plantation Forestry GIS.
- (e) It is recommended to maintain a **scientific networking** with countries in the region, especially ASEAN, and with international Forestry Research Institutions (e.g.: IUFRO, CIFOR) and their member institutions or countries, working on GIS applied to plantation forestry and Forest certification.
- (f) The use of GIS applications should be considered in the **implementation of forest land allocation, community forestry and the expansion of commercial plantation programmes** throughout Lao PDR.

3- Suggested Follow-up Actions

Coordinated regional actions for Plantation Forestry GIS development

Preliminary remarks:

- a) Taking into consideration the discussions, the needs and expectations expressed during the Workshop at various levels, (DOF, NAFRI, Provinces, private forestry sector) and the experience presented by the invited resource persons from countries in the region (Philippines, Singapore, Malaysia, Thailand, Vietnam) and by Cirad - Forêt / France, follow-up actions are suggested, in line with the conclusion and recommendations that have been drawn and agreed in the framework of the workshop.
- b) It should be noted that these are at this stage the preliminary concept outlines of a proposed action programme that need to get the agreement from all the parties involved and to be elaborated further, taking into account the respective expectations, needs and constraints as well as the specific national strategy in terms of plantation forestry, database management and Geographical Information System.

- c) It should also be emphasized that at this early stage, the funding sources have not yet been identified, and after having reached a consensus in the methodological approach and objectives, it will be necessary to agree with the operation plan to identify the financial sponsorship.

A- Objectives

- (a) To define methodology, to determine the most appropriate tools for plantation forestry applications**
- (b) To share experience among the various stakeholders and participating countries,**
- (c) To create a dynamic in terms of scientific exchange, capacity building and data collection,**
- (d) To initiate collaboration at different scales (regional, national, provincial), between government and private sector, focused on common needs and common tools.**

B- Methodological approach

- 1- Partners from countries in the region:
 - They contribute in developing adapted GIS solutions meeting specific needs, including practical field testing and training,
 - then share the R&D results, to build up a comprehensive GIS adapted to the specific context.
- 2- Each country takes profit from the advanced experience gained by the other country partners in specific fields (e.g.: plantation establishment, plantation planning and monitoring, community participation, etc.).
- 3- Taking into account the needs and expectations collected during the Vientiane Regional Workshop, three key specific fields have been identified that will constitute Project components:

- **Component 1: Site identification / suitability / site- species matching.**
- **Component 2: Plantation planning and monitoring at various scales**
- **Component 3: Community participation in plantation forestry.**

- 4- One selected pilot sites per country, devoted to specific components
- 5- One leader for each component. His role is to define an adapted methodology, to determine the most appropriate tools, to test the methodology and tools in the lead country site, as well as in the two other countries.
- 6- Scientific exchange could be organized in order to ensure a close collaboration at the project site level as well as for the results transfer and application of the three GIS components

C- The Project Components content.

- 1- Component 1: Site identification / suitability / site- species matching.**

- Socio-Technical Profiles (STP),
- Environmental Baselines Survey (EBS)
- Creation of database related to site / species matching

2- Component 2: Plantation planning and monitoring at various scales

- Planning at different scales:
 - national scale
 - provincial level ;
 - local level: Private enterprises, Group of farmers.
- Growth & Yield monitoring
- Environmental Monitoring
- Silvicultural operations monitoring.

3- Component 3: Community participation in plantation forestry

- Tools for negotiations on community forestry issues,
- Non wood forest products
- Seedling production and satellite nurseries
- Community based Forest products management.

D- Proposed partnership

1- Main country partners

- ◆ Three ASEAN countries involved in plantation forestry are proposed to be the main country partners: Lao PDR, Philippines, Vietnam.
- ◆ Although all countries have gained experience in all three components, it is proposed that each country with a recognised experience be considered as the lead country for the related component:
- ◆ Laos, having developed in the framework of the Lao ADB Plantation Forestry Project some tools for site identification / suitability (STP and EBS), will lead Component 1.
- ◆ Vietnam, having developed large forest plantations in the framework of a 5 million hectare plantation programme, is proposed to lead Component 2.
- ◆ The Philippines, with its acknowledged experience in community based forestry management and small scale forest industries, is proposed to lead Component 3.
- ◆ In order to ensure that the three components can be transferred in due time and without delay to the other participating countries, it is proposed that each country assign a component correspondent working closely with the component leader, as shown herebelow in Figure 1.

2- Scientific back-up partners

- ◆ In order to facilitate and coordinate the scientific know-how in the framework of the three components, it is proposed that three partners collaborate in this proposed project:
- ◆ **CRISP** (Centre for Remote Imaging, Sensing and Processing), Singapore, for the remote sensing technology and the satellite imagery that might be required for the project, as well as for some training activities in remote sensing and processing.
- ◆ **CIRAD** (Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement), France, for its experience and know how in Plantation Forestry management and planning, in database management and GIS, in data processing and modelling.
- ◆ **MERI** (Mekong Environmental Resource Institute), Bangkok - Thailand, for its involvement in the Mekong Region in environmental impact assessment and monitoring

as well as in the development of STP /EBS and Environmental Monitoring protocols in the framework of the Lao ADB Plantation Forestry Project.

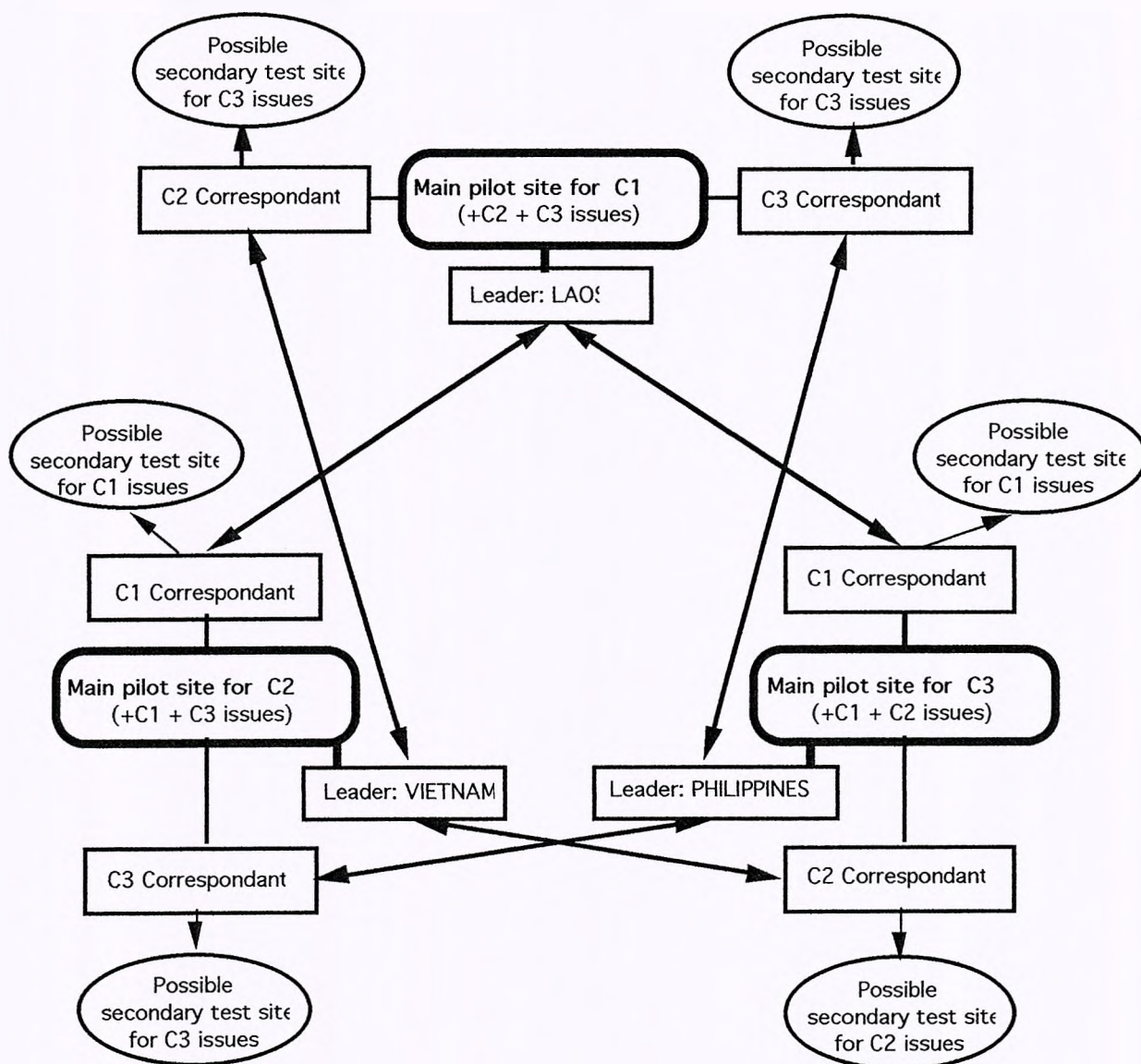
- ◆ It may be an advantage to consider the participation of Innoprise Corporation Sbn Bhd, ICSB GIS division, Kota Kinabalu, Sabah - East Malaysia, because of its experience in GIS development for the management of a 1-million hectare forest concession, including natural forest management and forest plantation management.

E- Duration: 3 years

F- Tentative action programme for each component

Component leader	Associated countries
Year 1: <ul style="list-style-type: none"> • Identification of the Pilot project sites • Identification of the various participating actors (Provinces and private sectors) • Definition of methodology and adaptation • Common data dictionary and data base structure • Data collection protocol • Data collection • Inception report • Training programme • Yearly Workshop 	Year 1: <ul style="list-style-type: none"> ▪ Identification of the Test project sites ▪ Identification of the various participating actors (Provinces and private sectors) ▪ Adapted methodology ▪ Data collection ▪ Yearly Workshop
Year2: <ul style="list-style-type: none"> ▪ R&D programme / training ▪ Field activities ▪ Yearly Workshop: review progress and constraints / share R&D results 	
Year 3: <ul style="list-style-type: none"> ◆ R&D programme / training ◆ Field activities ◆ Restitution of the GIS techniques and tools among the participating countries ◆ Yearly Workshop 	

Figure 1: Proposed structure for the three component project.



- **C1: Component 1 : Site identification / suitability / Site – species matching**
- **C2: Component 2: Plantation planning & monitoring at various scales**
- **C3: Component 3: Community participation in plantation forestry**

Annexe 3 :

Résumé du Rapport de Mission d'Assistance Technique ADB

Mark KELLY (Novembre 2000)

1- Current status of industrial tree plantations subsector in Laos

- Plantation development in Lao at early stage ;
- Still considerable private sector interest in investing in plantations.
- BGA lao Plantation Forestry Ltd shows foreign investors are interested in plantations ; They are currently looking for foreign investors.
- BAFCO and Km5 Forest Products Ltd : both invested in their own plantations ; potential for processing from young plantation grown wood.
- Plantation activities generate considerable local spending.
- Actual areas of plantations in Lao PDR not clear.
- Farmers plantation much smaller scale but can play important role ; BAFCO has encouraged farmers to invest in tree plantations. Similarly, small farmers around plantations are encouraged to invest in plantation.

2- Lessons for future formulation of projects

- APB capacity to provide and absorb technical assistance is limited : widespread criticism of APB slowness.
- Can establish interest and investment from small farmers in plantation.
- Can establish good quality plantation in Laos.
- Land available if through right STP process. Protection of food production potential is vital.
- Market driven policy environment can help eg : BAFCO harvesting and transport approval.
- Private sector will respond to demonstration of benefit from plantations.
- Model farmer plantations more successful than demonstration plantation.
- Needs to monitor growth rate from permanent sample plots.
- Policy review.
 - Strong government support for plantation development.
 - Review of policy framework.
 - ✓ Strategic vision for 2020
 - ✓ Plantation regulation
 - ✓ PM Decree N°10-2000
 - Reforestation charges :
 - ✓ Potential supply of funds for village plantations development.
 - Business policy environment
 - ✓ General economic situation and policy environment
 - ✓ Factors influencing business development

3- Current status of policy framework for community managed plantation and legal framework for establishing transparent business processes.

- Strategic vision and plantation regulations are the key documents and provide a positive environment for plantation development.
- Need to emphasize that plantation development will be private sector driven across a number of scales : there is a danger that the focus on government sponsored plantation (using reforestation charges° will detract from dynamic private sector investment from small scale plantation. Need to build comprehensive approach to reforestation recognizing different needs of various clients, i.e : small farmers and business.
- Business processes for plantations are improved : BGA illustrates power of agreement with company, but took too long. Processes can be streamlined. Plantation harvesting and transportation much simplified. e.g. : BAFCO.

- Need to attract more foreign investors. BGA is leading this as will companies like BAFCO, e.g : IKEA investment in sawmill. Can do by preparing baseline informations in co-operation with private sector and FIMC. Make DOF plantation division a one-stop shop for plantation assistance.

4- Issues relevant to further development of plantations

4.1- Role of plantation in poverty alleviation

- Diversification of income for farmers
- Alternative to natural forest harvesting for some products for farmers
- Labour income from individual and company plantations
- Plantation development strong links with poverty alleviation.
- Generates diversified incomes for small farmers – subject to difficulties of paying interests.
- Poor farmers probably need different management regimes to generate poles in the first years.
- Generates work for rural people around larger scale plantations, and considerable works for subcontractors.
- Plantation establishment and maintenance generates considerable work income flows to regions.
- Processing provides large potential for generating employment and income flows (e.g. : BAFCO > 100 people)

4.2 – Policy and Governance issues to be addressed for further development of the subsector, particularly in the context of encouraging private sector involvement.

- Very supportive government policies.
- Need better understanding of role of more market driven policies to promote plantation development.
- Help with market development plantation investors as well as potentially new investors.
- Room to improve capacity of APB in provision of credit- technical assistance for rural credit and simplify process for larger scale investors (Link to existing rural credit project ?)
- On-going improvement in DOF as key government agency with responsibility for plantations. Would be helped by building capacity for database of plantations in Laos and projected wood flows.
- Use DOF as major point of liaison for plantation investors and other relevant government agencies.

4.3- Availability of credit for the tree plantations industry

- Needs to distinguish between clients (different credit needs).
- Small farmers may have difficulties in meeting any credit repayments (interest or principal) before some cash flows from plantations.
- Put time limit on private investors (business people and companies that can receive ADB credit. (about 5 years)
- Lack of any credit market for long term plantation development in Laos – (not uncommon in the rest of the world).

4.4- Institutional capacity building.

- APB needs to improve capacity to deliver credit.

- Understanding of « creating and enabling environment » for private sector investment rather than government driven investment.
- Decentralization – push out to provinces especially understanding of enabling environment.
- DOF plantation division to become a focus for plantation development – work with private investors.

5- Potential for future ADB assistance

5.1- Needs

- Further data on establishment of agroforestry systems for farmers.
- Improved matching of species and site
- Private sector development

5.2- Policy assistance

- Advice on implementing plantation regulations
- Understanding importance of market driven approaches to plantation development.
- Creating an enabling environment for private sector development.

5.3- Market development

- Creating critical mass
- Domestic processing
 - Technology transfer for processing operations

5.4- Capacity building

5.5- Poverty alleviation

- Including gender related issued.

DEVELOPMENT

Forestry GIS workshop

By Thavisack Sonesourinh

A regional workshop on the application of a Geographical Information System (GIS) was held from December 12 to 14 at the Agriculture and Forestry (AF) Ministry's Forestry Department office.

The workshop, to discuss the use of GIS to monitor forestry for sustainable and viable agroforestry, was run by the AF Ministry, the National Agriculture and Forestry Research Institute (NAFRI) and CIRAD (Centre International en Recherche Agronomique pour le Développement - International Centre for Agricultural Research for Development).

The workshop reviewed experience gained from the Lao-ADB Plantation Forestry Project, and looked at database management and GIS applications for agroforestry plantations. Lao participants were joined by experts from the Philippines, Singapore, Thailand and Vietnam.

Development agencies and donors (ADB, UNDP, FAO, AFD, GTZ, SIDA, DANIDA and FINIDA) involved in Laos and the region expressed their views and gave recommendations and suggestions on how to coordinate development programmes and avoid redundancy.

AF Ministry Office Director General Phouvieng Laddavong opened the workshop, saying: "I hope this workshop series will substantially contribute to sustainable plantation forestry, using GIS...for planning, management and monitoring."

The 7-year Lao-ADB Plantation Forestry Project began in August 1994, and has been evaluating potential sites for rural plantation, including assessment of environmental impact and the socio-economic benefits



(From left) Mr Xem Xamountry, Mr Phouvang Lattanavong, Mr Ty Phommasack and Mr Patric Durand.

It began work in Vientiane municipality and Vientiane, Bolikhamsay and Savannakhet provinces, and later expanded to include Champassak, Saravan and Khammuan provinces. The project has established tree plantations on around 10,000 hectares, with pilot plantations, some being managed by individual farmers, and a number for commercial exploitation.

Mekong Environment and Resource Institute Senior Researcher Anthony M.Zola said: "Establishing tree plantations is an

essential component of the Lao economic and social development plan, and will contribute significantly to sustainable development. Environment factors play a vital role in establishing and maintaining tree plantations. Monitoring major environmental factors is crucial to ensure that the negative impacts are minimized and the positive maximized. Using GIS techniques to monitor the environmental elements would allow predetermined mitigation, which could be applied to many agro-ecologically and geophysically similar

sites."

Measurement of growth and yield on pilot blocks has yielded much data over the last six years, on silviculture, on socio-economics, on the environment, and on bio-diversity.

The workshop participants also visited project plots in Vientiane province, where timber producers and consumers are given technical assistance and support by the Lao-ADB plantation project.

Among more than 50 participants were Forestry Department Director General Xem Xamountry; NAFRI Director General Ty Phommasack; CIRAD's Patric Durand; MERI representatives from Thailand; other CIRAD staff from France; members of the Institute of Renewable Natural Resources and the College of Forestry and Natural Resources in the Philippines, and of the Forest Inventory and Planning Institute of Vietnam; representatives of the Singapore Centre for Remote Imaging, Sensing and Processing; and Forestry Service heads from Champassak, Saravan, Savannakhet, Borikhamsay and Vientiane provinces and Vientiane municipality.